

ABSTRACT

An apparatus and method for manufacturing ultra-fine particles using an electrospray device is disclosed. One or more capillary provided at its tip with a nozzle is positioned within a guide duct and precursors such as metal organic materials and metal halogen compounds, or nonvolatile substances or volatile substances are supplied to the capillary. Voltages are applied to the capillary and the guide duct, respectively, so that a voltage difference is generated therebetween and the highly charged liquid droplets from the capillary are sprayed. The sprayed liquid droplets are carried along the guide duct together with carrier gas injected into the guide duct. When heat energy is applied to the liquid droplets, chemical reactions of the liquid droplets occur. A collecting plate positioned in front of the guide duct collects ultra-fine particles formed by the chemical reactions.

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